

## **IN THE CLAIMS**

Claims 1 through 24: **Cancelled**

25. (New) A spinning preparation machine with a drafting device for drafting at least one fiber sliver, comprising:

a microwave sliver thickness sensor through which the fiber sliver is guided, said sensor disposed at at least one of an inlet or an outlet of said drafting device, said microwave sensor comprising at least one cavity resonator defined by a resonator wall; and

means for minimizing temperature-conditioned deformations of said resonator during measurement of sliver thickness.

26. (New) The spinning preparation machine as in claim 25, wherein said means comprises at least one wall of said resonator being made of a material having a low coefficient of thermal expansion at operating temperatures of said spinning preparation machine.

27. (New) The spinning preparation machine as in claim 26, wherein said material is steel having a coefficient of thermal expansion of about 0 at 20° C.

28. (New) The spinning preparation machine as in claim 27, wherein said steel is a Ni36 steel having a nickel component of between about 35% to about 37%.

29. (New) The spinning preparation machine as in claim 25, wherein said means comprises thermal insulation means for insulating said microwave sensor from surrounding components of said spinning preparation machine.

30. (New) The spinning preparation machine as in claim 29, wherein said thermal insulation means comprises thermally insulating connecting elements between said microwave sensor and said machine components.

31. (New) The spinning preparation machine as in claim 29, wherein said thermal insulation means comprises a thermally insulating housing disposed at least partially around said microwave sensor.

32. (New) The spinning preparation machine as in claim 25, wherein said means comprises means for actively adjusting temperature at said microwave sensor to obtain a substantially constant temperature at resonator walls of said microwave sensor.

33. (New) The spinning preparation machine as in claim 32, further comprising a temperature measuring element disposed with respect to said microwave sensor to detect temperature of said resonator chamber or wall.

34. (New) The spinning preparation machine as in claim 33, further comprising a temperature regulating unit operably interfaced with said temperature measuring element and said active temperature adjusting means.

35. (New) The spinning preparation machine as in claim 32, wherein said active temperature adjusting means comprises means for heating said microwave sensor.

36. (New) The spinning preparation machine as in claim 35, wherein said heating means comprises a heating foil disposed in contact with and at least partially around said resonator.

37. (New) The spinning preparation machine as in claim 35, wherein said heating means is incorporated into said resonator wall.

38. (New) The spinning preparation machine as in claim 32, wherein said active temperature adjusting means comprises means for cooling said microwave sensor.

39. (New) The spinning preparation machine as in claim 38, wherein said cooling means comprises cooling agents that reduce resonator wall temperature.

40. (New) The spinning preparation machine as in claim 32, wherein said active temperature adjusting means comprises means for generating and controlling a directed airflow in or around said resonator.

41. (New) The spinning preparation machine as in claim 40, wherein said airflow is a suction flow or a blowing flow.

42. (New) The spinning preparation machine as in claim 40, wherein said airflow is directed so as to clean said resonator chamber as it actively cools said resonator chamber.

43. (New) The spinning preparation machine as in claim 32, wherein said active temperature adjusting means comprises at least one Peltier element.

44. (New) A cavity resonator for use in a microwave sensor of a textile spinning preparation machine, said resonator comprising resonator walls wherein at least one of said walls is formed of a material having a low coefficient of thermal expansion at operating temperatures of the spinning preparation machine.

45. (New) The cavity resonator as in claim 44, wherein said material is steel having a coefficient of thermal expansion of about 0 at 20° C.

46. (New) The cavity resonator as in claim 45, wherein said steel is a Ni36 steel having a nickel component of between about 35% to about 37%.